Low Volume Road Traffic Counts

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LVR Traffic Counts

- **Overview**
- **Policy**
  - Use of Existing Data
  - Level 1 Count
  - Level 2 Count
- **Miscellaneous**
DGLVR Law:

Section 27. Section 9106 heading, (a) and (b) of title 75 are amended to read:
§ 9106. Dirt and gravel and low volume road maintenance.

(A) statement of purpose. It is the intent and purpose of this section:
(1) to fund safe, efficient and environmentally sound maintenance of sections of dirt and gravel roads which have been identified as sources of dust and sediment pollution.
(2) to establish a dedicated and earmarked funding mechanism that provides streamlined appropriation to the county level and enables local officials to establish fiscal and environmental controls.
(3) to fund safe, efficient and environmentally sound maintenance of sections of low volume roads that are sealed or paved with an average daily traffic count of 500 vehicles or less.

(B) general rule. Of the funds available under section 9502(a)(1) (relating to imposition of tax), $1,000,000 $7,000,000 shall be annually distributed to the department of conservation and natural resources for the maintenance and mitigation of dust and sediment pollution from parks and forestry roads. Funds in the amount of $4,000,000 $28,000,000 shall be appropriated annually to the state conservation commission and administered in a non-lapsing, nontransferable account restricted to maintenance and improvement of dirt and gravel and low volume state and municipal roads. The state conservation commission shall apportion the funds based on written criteria it develops to establish priorities based on preventing dust and sediment pollution. In the first fiscal year, top priority shall be given to specific trouble spot locations already mapped by the task force on dirt and gravel roads and available from the department. A minimum of $8,000,000 of the total appropriated annually shall be for maintenance and improvement of low volume roads.” (NOTE: remainder of § 9106 remains unchanged)
DGLVR Law:

“To fund safe, efficient, and environmentally sound maintenance of sections of low volume roads that are sealed or paved with an average daily traffic count of 500 vehicles or less.”
Traffic Counts not quite as straightforward as they sound:

• FHWA has a standard method, recommends a 48 hour count.

• Nobody, including PennDOT, really uses the FHWA method directly.

• EVERY STATE has their own methods and policies.
Traffic Counts not quite as straightforward as they sound:

Confidence in count

Length of count
Traffic Counts, Our Goal:

- Verify within reason a road has $\leq 500$ vehicles per day.

- Simple, and accurate enough.
Traffic Counts, Our Goal:

• Verify within reason a road has \( \leq 500 \) vehicles per day.

• Simple, and accurate enough.

AADT

Average Annual Daily Traffic
LVR Traffic Counts

• Overview

• Policy
  • Use of Existing Data
  • Level 1 Count
  • Level 2 Count

• Miscellaneous
Responsibility:

• Applicant is responsible for providing traffic counts before a contract can be signed.

• Conservation District is responsible for verifying that a count exists, and that the count meets the criteria established in state and local policy.
Program Policy (adopted 9/9/14 by SCC):

• Use existing data.

• Level 1 count (2 hour).

• Level 2 count (24 hour).
Program Policy (adopted 9/9/14 by SCC):

- This policy sets the minimum statewide Program standard.

- Your County can enact stricter count standards.

- More to come on this at the end
Traffic Count Validation Form:

- Standard form
- Keep with project files.

Dirt, Gravel, and Low Volume Road Maintenance Program (DGLVRP)
Traffic Count Validation Form

TRAFFIC COUNT LOCATION
Road Name and #: ___________________  Road Owner: ___________________
County: ___________________  Township: ___________________
GPS Location (if available): ______________ W, ______________ N
If GPS location not available, describe count location here:

(for example: Traffic count on Smith road, 1/2 mile north of intersection with SR180, Maple road.)

Traffic Counts can be validated by use of existing data, a level one two-hour count, or a level 2 twenty-four-hour counts. Select the method used below and complete that section of the form.

☐ Existing Data or Extrapolation: For existing traffic data, or extrapolation of existing data, describe the data used and extrapolation method on the back of this page. If necessary, attach a description of the data and extrapolation methodology, source and date of traffic counts used, and maps.

☐ LEVEL 1 TRAFFIC COUNT DETAILS (2 hour count)
Count Performed From _______ / _______ / _______ to _______ / _______ / _______.
Date Time Date Time
Describe Count Method: ___________________.
Count Performed by: ___________________.
(name) (organization)
Total Count = ________ vehicles x 12 = __________ ADT

☐ LEVEL 2 TRAFFIC COUNT DETAILS (24 hour (minimum) automatic count)
Count Length: 24hr 48hr 72 hour other: _______.
Count Performed From _______ / _______ / _______ to _______ / _______ / _______.
Date Time Date Time
Counter Used: air tube radar other: _______. Counter Make/Model: ___________________.
Count Performed by: ___________________.
(name) (organization)
Total Count = ________ 24 hour count = __________ ADT

Applicant Validation: I hereby swear that this count is accurate as reported here and done in accordance with State Conservation Commission specifications.

______________________________  ______________________________  ___________________  ______________
print name  position (with applicant)  signature  date

Conservation District Validation: The traffic count data supplied by the applicant is acceptable to the Conservation District in accordance with SCC and county policy.

______________________________  ______________________________  ___________________  ______________
print name  position  signature  date

This form verifies eligibility of a road/road for SRF funding as having a traffic count of 500 vehicles per day or less. It must be signed and retained in the project files.
Traffic Count Validation Form:

- Standard form
- Keep with project files.

**Road Information**

**Use Existing Traffic Data**

**Level 1 Count**

- **Traffic Count Location**
  - Road Name and #:
  - County:
  - GPS Location (if available):
  - If GPS location not available, describe count location here:

Traffic Counts can be validated by use of existing data, a level 1 two-hour count, or a level 2 twenty-four-hour counts. Select the method(s) to be used and describe the rationale (if necessary). (For example: Traffic count on Smith Road, 1/2 mile north of intersection with SR180, Maple Road.)

**Level 2 Count**

- **Level 2 Traffic Count Details** (24 hour (minimum) automatic count)
  - Count Length: 24hr, 48hr, 72 hour, other:
  - Count Performed From / / / to / / /
  - Date Time Date Time
  - Describe Counter:
  - Count Performed by (organization):
  - Total Count = ______ vehicles x 12 = ________ ADT

**Validation**

Applicant Validation: I/hereby swear that this count is accurate as reported here and done in accordance with State Conservation Commission specifications.

<table>
<thead>
<tr>
<th>Applicant Validation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Print Name: position (with applicant) signature date</td>
</tr>
</tbody>
</table>

Conservation District:

This form verifies eligibility of $x credit for surf funding as having a traffic count of 500 vehicles per day or less. It must be signed and retained in the project files.
Traffic Count Validation Form:

- Standard form
- Keep with project files.
### Traffic Count Validation Form:

**Dirt, Gravel, and Low Volume Road Maintenance Program (DGLVRP)**

**Traffic Count Validation Form**

<table>
<thead>
<tr>
<th>TRAFFIC COUNT LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road Name and #:_________</td>
</tr>
<tr>
<td>County:_________</td>
</tr>
<tr>
<td>GPS Location (if available):_________ W, _________ N</td>
</tr>
<tr>
<td>If GPS location not available, describe count location here:_________</td>
</tr>
</tbody>
</table>

*(for example: Traffic count on Smith road, ¼ mile north of intersection with SR180, Maple road.)*
LVR Traffic Counts

• Overview

• Policy
  • Use of Existing Data
    • Level 1 Count
    • Level 2 Count

• Miscellaneous
Municipal Roads

• Less than 5% have actual counts.

• Many more have estimates, but estimates cannot be used.

• Counts are valid for 5 years.

• Check with your planning commission.
PennDOT Roads

- Have good traffic data
  [http://www.dot.state.pa.us/Internet/bureaus/pdplanres.nsf/info/BPRTrafficInfoTrafficVolumeMap](http://www.dot.state.pa.us/Internet/bureaus/pdplanres.nsf/info/BPRTrafficInfoTrafficVolumeMap)

- Can be used to extrapolate to local roads
PennDOT Roads: example map
PennDOT Roads: example map
**PennDOT Roads:** example map

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LVR Traffic Counts

Use Existing Data

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99/220/322

P. Matilda

N. Atherton

SC

unknown
PennDOT Roads: example map
PennDOT Roads: example map
Traffic Count Validation Form:

- Standard form
- Keep with project files.

Use Existing Traffic Data
Traffic Count Validation Form:

Existing Data

Traffic Counts can be validated by use of existing data, a level 1 two-hour count, or a level 2 twenty-four-hour counts. Select the method used below and complete that section of the form.

Existing Data or Extrapolation: For existing traffic data, or extrapolation of existing data, describe the data used and extrapolation method on the back of this page. If necessary, attach a description of the data and extrapolation methodology, source and date of traffic counts used, and maps.

Details for use of existing data or extrapolation from existing data:

Existing Data must have been collected within the previous 5 years and conform to the Program's Level 2 count protocol at a minimum. “Estimated” traffic counts that exist for many municipal roads cannot be used.

It is possible to use existing data for roads with 500 vehicles per day or less to extrapolate logically to subsidiary roads. For example, a spur road between two State Roads where both state roads have less than 500 vehicles per day must also have less than 500. This extrapolation of data can be used to verify that a road has 500 vehicles per day or less without performing a count. This extrapolation of traffic counts must prove the ADT on the road is 500 or less to the satisfaction of the Conservation District.

Describe existing data used and extrapolation methodology below. Attach additional material and maps if needed.
LVR Traffic Counts

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Level 1 Counts

• Count traffic for two hours at the busiest time of the day (3-6pm).

• While not as accurate, it is an “overestimation” of traffic counts.

• Counts of ≤500 mean road is eligible.
Level 1 Counts

- Simple and quick.
- Designed to eliminate a lot of the very low volume roads with minimal effort.
- Hopefully it will suffice for >75% of the traffic counts we need.
Level 1 Counts

- Two Hour Counts
- Manual Counts
- Video Counts
- Other?
Level 1 Counts

Must be done between March 1 and the week before Thanksgiving.
Level 1 Counts

- Between March 1 and the week before Thanksgiving.
- No holidays, or the day before or after a holiday.
- On a Tuesday, Wednesday, or Thursday
- Two consecutive hours between 3:00 pm & 6:00 pm.
- Direction of travel or type of vehicle does not matter.
- The traffic count for the time period will be adjusted to a 24 hour period by simply multiplying the 2 hour count volume times twelve (12)
- Only licensed motor vehicles should be counted.
Only licensed motor vehicles should be counted...
Level 1 Counts

• A Level 1 count that yields 600 vehicles per day does not disqualify a road since it represents an overestimation.

• It simply means that a Level 2 count is needed if they wish to pursue the project.
**Level 1 Counts**

**Example 1:** A count for two consecutive hours between 4:00 & 6:00 pm produces a count of 25.
Level 1 Counts

Example 1: A count for two consecutive hours between 4:00 & 6:00 pm produces a count of 25.

\[
12 \times 25 = 300 \text{ average daily count.}
\]

This worksite would be eligible (no level 2 count needed).
Level 1 Counts

Example 1: A count for two consecutive hours between 4:00 & 6:00 pm produces a count of 25.

12 x 25 = **300 average daily count.**

This worksite would be eligible (no level 2 count needed).

Example 2: A traffic count for two consecutive hours between 3:30 pm and 5:30 pm produces a count of 53.
**Level 1 Counts**

**Example 1:** A count for two consecutive hours between 4:00 & 6:00 pm produces a count of 25.

\[12 \times 25 = 300 \text{ average daily count.}\]

*This worksite would be eligible (no level 2 count needed).*

**Example 2:** A traffic count for two consecutive hours between 3:30 pm and 5:30 pm produces a count of 53.

\[12 \times 53 = 636 \text{ average daily count.}\]

*This does not disqualify the road. It simply means that a more accurate Level 2 Count is required if the applicant wants to continue to pursue Program funding.*
Traffic Count Validation Form:

- Standard form
- Keep with project files.
Traffic Count Validation Form:

LEVEL 1 TRAFFIC COUNT DETAILS (2 hour count)

Count Performed From ___/___/____, _____ to ___/___/____, _____
   Date       Time       Date       Time

Describe Count Method: (hand/camera/counter/etc.)______________________________

Count Performed by: ___________________________ of ___________________________
   (name)                          (organization)

Total Count = ________ vehicles x 12 = _________________ ADT
LVR Traffic Counts

- **Overview**

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  - Use of Existing Data
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  - Level 2 Count

- **Miscellaneous**
Level 2 Counts

• 24 hour automated count.

• Why 24 hours...
Traffic Counts not quite as straightforward as they sound:

FIGURE 3-3-1
Relative Cost and Accuracy of Count Duration and Frequency

Cost per Year
(Expressed as a Unit Cost)
Traffic Counts not quite as straightforward as they sound:

LVR Traffic Counts Overview

- 24 hour: 9% error
- 48 hour: 7.6% error
- 72 hour: 7% error
Level 2 Counts

• Any Counter type. Air tube most common.

• Only total traffic is needed, not vehicle type or hourly breakdowns.
Level 2 Counts

Must be done Between March 1 and the week before Thanksgiving.
Level 2 Counts

• It must be conducted between March 1 and the week before Thanksgiving.
• It cannot be conducted on a holiday, or the day before or after a holiday.
• It must be conducted between 12 AM Tuesday and 12 AM Friday.
• It must be conducted for a minimum of 24 consecutive hours.
• Only the number of vehicle passes is counted, regardless of direction of travel or type of vehicle.
Level 2 Counts

- A Level 2 count that yields >500 vehicles per day means a road is not eligible.

- Multiple Counts?? Up to you locally.
Traffic Count Validation Form:

- Standard form
- Keep with project files.
Traffic Count Validation Form:

LEVEL 2 TRAFFIC COUNT DETAILS (24 hour (minimum) automatic count)

Count Length: 24hr  48hr  72 hour  other: __________________________

Count Performed From  / / , ,   to  / / , 

Date  Time  Date  Time

Counter Used: air tube  radar  other: ________  Counter Make/Model: ________________

Count Performed by: _______________________________  of  ____________________  
(name)  (organization)

Total Count = ______________  24 hour count = ______________  ADT
Traffic Count Validation Form:

- Standard form
- Keep with project files.
Traffic Count Validation Form:

Keep with project files.

Applicant Validation: I hereby swear that this count is accurate as reported here and done in accordance with State Conservation Commission specifications.

_________________________  ___________________________  ___________________________
print name  position (with applicant)  signature  date

Conservation District Validation: The traffic count data supplied by the applicant is acceptable to the Conservation District in accordance with SCC and county policy.

_________________________  ___________________________  ___________________________
print name  position  signature  date

This form verifies eligibility of a sealed road for LVR funding as having a traffic count of 500 vehicles per day or less. It must be signed and retained in the project files.
LVR Traffic Counts

• Overview

• Policy
  • Use of Existing Data
  • Level 1 Count
  • Level 2 Count

• Miscellaneous
Conservation Districts may, at their discretion, use administrative and education funding to facilitate or support traffic counts for applicants.

- Buying and loaning counters.
- Paying for third party counts.

Districts should insure that all potential applicants have equal access to any traffic count facilitation measures they may employ.
**NORMAL Traffic Counts**

A traffic count survey cannot be conducted in a timeframe or manner that intentionally causes artificially low average daily traffic counts on a particular road segment

- Summer recess for a school access road
- When access is partially restricted or reduced
- Any other timeframe or manner that intentionally causes low average daily traffic counts.
- We can’t make a rule for everything. Use common sense.
Sharing Count Data
You may want to partner with your planning commission and/or share data with PennDOT. Note that PennDOT has additional requirements above our Level 2:
• 24 hours must start and end at midnight
• Must include hourly breakdowns
• May need vehicle class breakdowns
• PennDOT has specific counter vendors
Traffic Count Data

• 500 vehicles per day is simply a “door” that is open or closed for Program eligibility.

• We have not, and don’t recommend, using traffic data to rank sites.
This policy sets the minimum statewide Program standard. Your County can enact stricter count standards.

- Level 1 counts on video only?
- Only level 2 counts accepted?
- 48 Hour or longer counts for level 2?
- Third party counts only?
- CD doing counts?
- Must have hourly traffic breakdowns?
- Mandatory counts with application?
Questions on performing counts?

- Costs to contract counts.
- Cost of counters.
- Types of counters.
- Cheap –vs- expensive counters and data quality.
- Video counts.
- Count locations.
- Installing Counters.
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